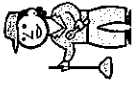
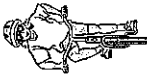

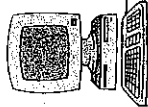
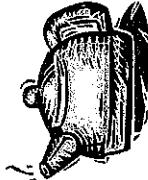
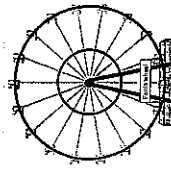

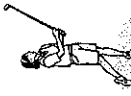


## Everyday Situations 1

<p><b>A. Plumber</b></p> <p>A plumber charges a fixed fee for coming to your house, then charges a fixed amount per hour on top of this.</p> <p><math>x</math> = the time the job takes in hours.</p> <p><math>y</math> = the total cost of the plumber's time in dollars.</p> <p>How much does the plumber charge for a 3-hour job?</p>	
<p><b>B. Cycling</b></p> <p>A cyclist travels along a direct route from town A to town B.</p> <p><math>x</math> = the distance of the cyclist from town A in miles.</p> <p><math>y</math> = the distance of the cyclist from town B in miles.</p> <p>How far apart are the towns?</p>	
<p><b>C. Movie subscription</b></p> <p>You get two movies free, but then you get charged at a fixed rate per movie.</p> <p><math>x</math> = the number of movies seen.</p> <p><math>y</math> = the total money spent in dollars.</p> <p>What is the fixed rate per movie?</p>	
<p><b>D. Internet café</b></p> <p>An internet café charges a fixed amount per minute to use the internet.</p> <p><math>x</math> = the number of minutes spent on the internet.</p> <p><math>y</math> = the cost of using the internet in dollars.</p> <p>How many minutes will \$8 buy?</p>	

## Everyday Situations 2

<p><b>E. Cooling kettle</b></p> <p>A kettle of boiling water cools in a warm kitchen.</p> <p><math>x</math> = the time that has elapsed in minutes.</p> <p><math>y</math> = the temperature of the kettle in degrees Celsius.</p> <p>What is the temperature of the room?</p>	
<p><b>F. Ferris wheel</b></p> <p>A Ferris wheel turns round and round.</p> <p><math>x</math> = the time that has elapsed in seconds.</p> <p><math>y</math> = the height of a seat from the ground in meters.</p> <p>How long does it take the Ferris wheel to turn once?</p>	
<p><b>G. Folding paper</b></p> <p>A piece of paper is folded in half. It is then folded in half again, and again...</p> <p><math>x</math> = the number of folds.</p> <p><math>y</math> = the thickness of the paper in inches.</p> <p>How thick would the paper be if you could fold it 10 times?</p>	
<p><b>H. Speed of golf shot</b></p> <p>A golfer hits a ball.</p> <p><math>x</math> = the time that has elapsed in seconds.</p> <p><math>y</math> = the speed of the ball in meters per second.</p> <p>When is the ball travelling most slowly?</p>	

## Everyday Situations 3

### I. Test drive

A car drives along a test track.

$x$  = the average speed of the car in meters per second.

$y$  = the time it takes to travel the length of the track in seconds.



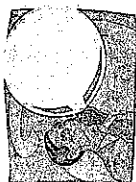
How long is the track?

### J. Balloon

A man blows up a balloon.

$x$  = the volume of air he has blown in cubic inches.

$y$  = the diameter of the balloon in inches.



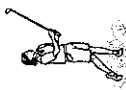
What is the diameter of the balloon when the man has blown in 1000 cubic inches?

### K. Height of golf shot.

A golfer hits a ball.

$x$  = the time that has elapsed in seconds.

$y$  = the height of the ball in meters.



When does the ball hit the ground?

### L. Film projector

A film is shown on a screen using a small projector.

$x$  = the distance from the projector to the screen in feet.

$y$  = the area of the picture in square feet.



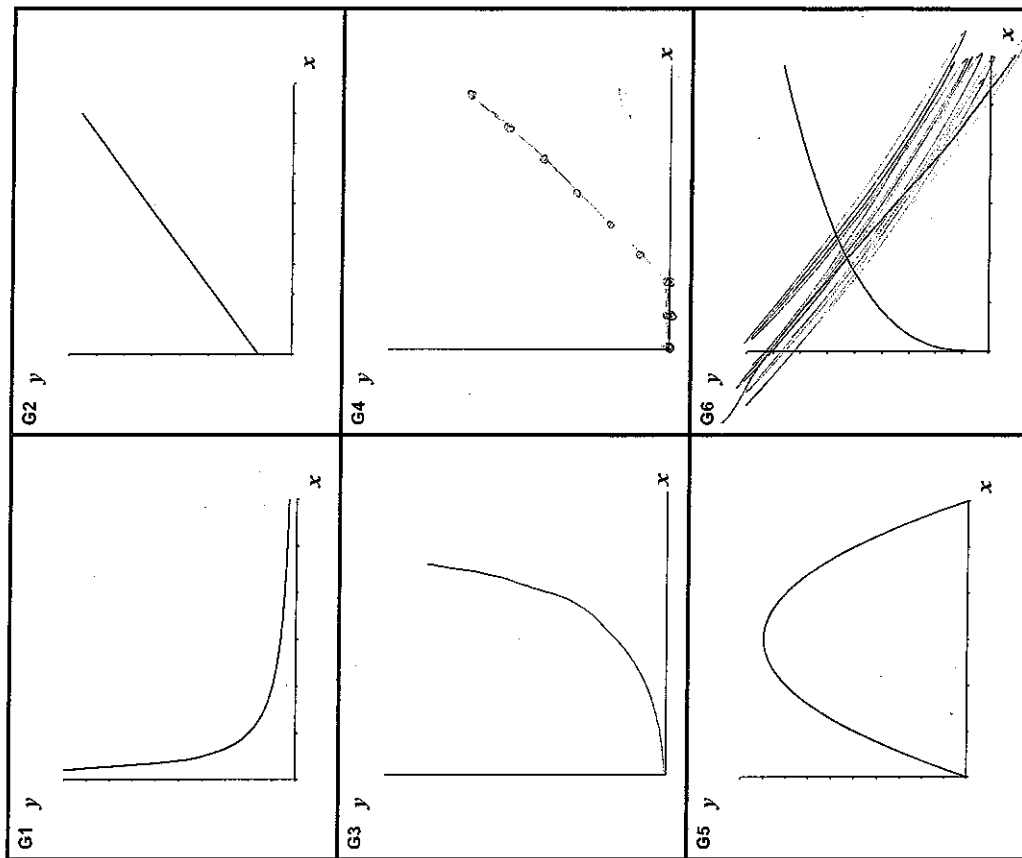
How large is the picture when the screen is 10 feet away?

Student Materials

Functions and Everyday Situations  
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## Graphs 1

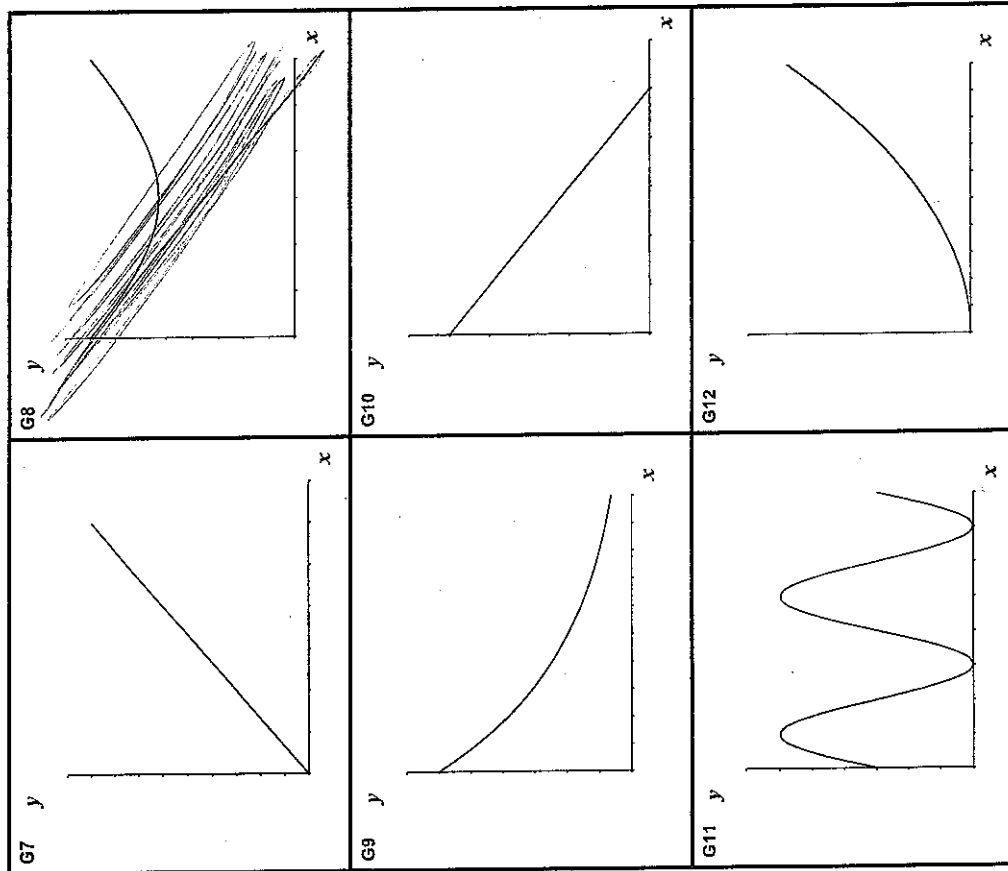


Student Materials

Functions and Everyday Situations  
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# Graphs 2



# Algebraic Functions

A1	$y = 5x - 10$	A2	$y = \frac{3x}{4}$
A3	$y = 40x + 60$	A4	$y = -x + 100$
A5	$y = \frac{200}{x}$	A6	$y = \frac{5}{4}\sqrt[3]{x}$
A7	$y = 10\sqrt{(x-3)^2 + 7}$	A8	$y = \frac{1}{4}x^2$
A9	$y = 30x - 5x^2$	A10	$y = 30 + 30\sin(18x)$
A11	$y = 20 + 80 \times (0.27)^x$	A12	$y = \frac{2^x}{1000}$